

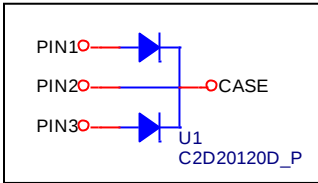
Device Modeling Report

COMPONENTS: Silicon Carbide Schottky Diode
PART NUMBER: C2D20120D
MANUFACTURER: CREE
REMARK: Professional Model



Bee Technologies Inc.

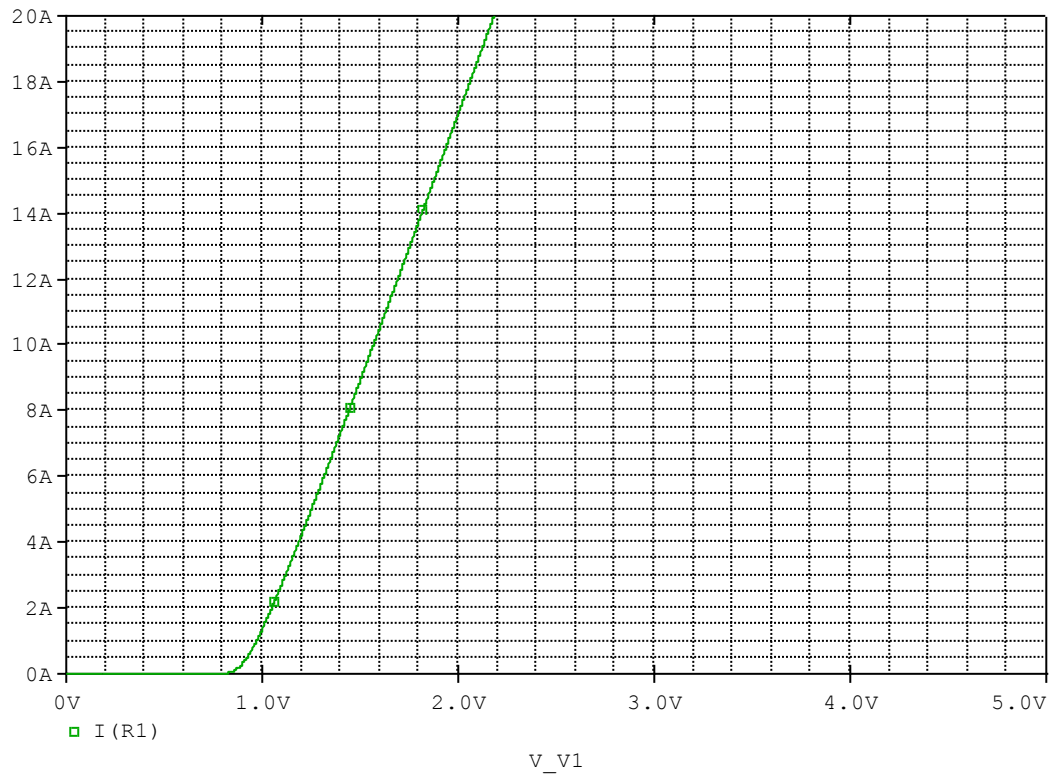
Circuit Configuration



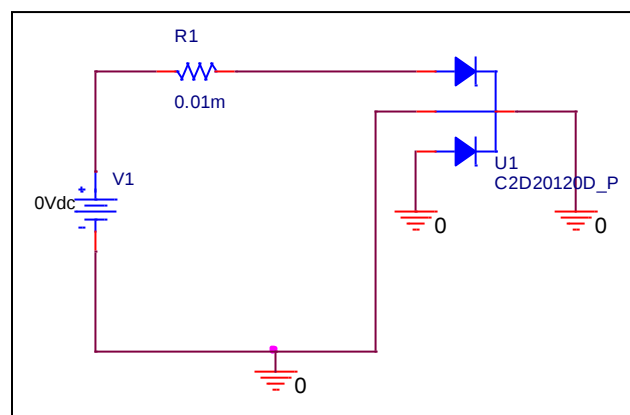
PSpice model parameter	Model description
IS	Saturation Current
N	Emission Coefficient
RS	Series Resistance
IKF	High-injection Knee Current
CJO	Zero-bias Junction Capacitance
M	Junction Grading Coefficient
VJ	Junction Potential
ISR	Recombination Current Saturation Value
BV	Reverse Breakdown Voltage(a positive value)
IBV	Reverse Breakdown Current(a positive value)
TT	Transit Time
EG	Energy-band Gap

Forward Current Characteristic

Circuit Simulation Result

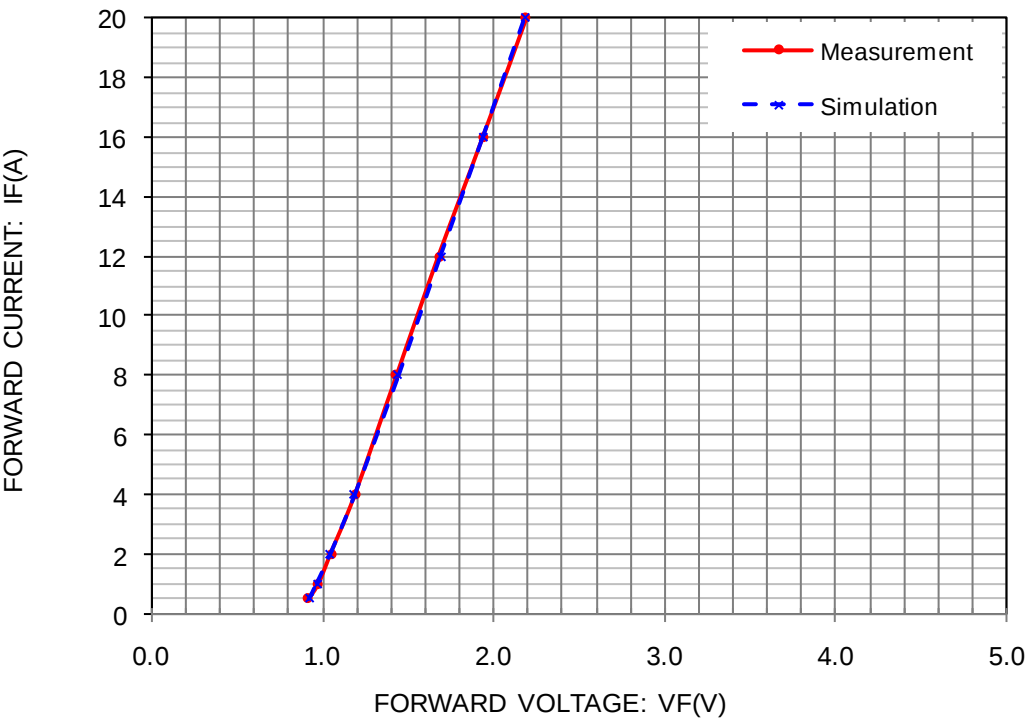


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

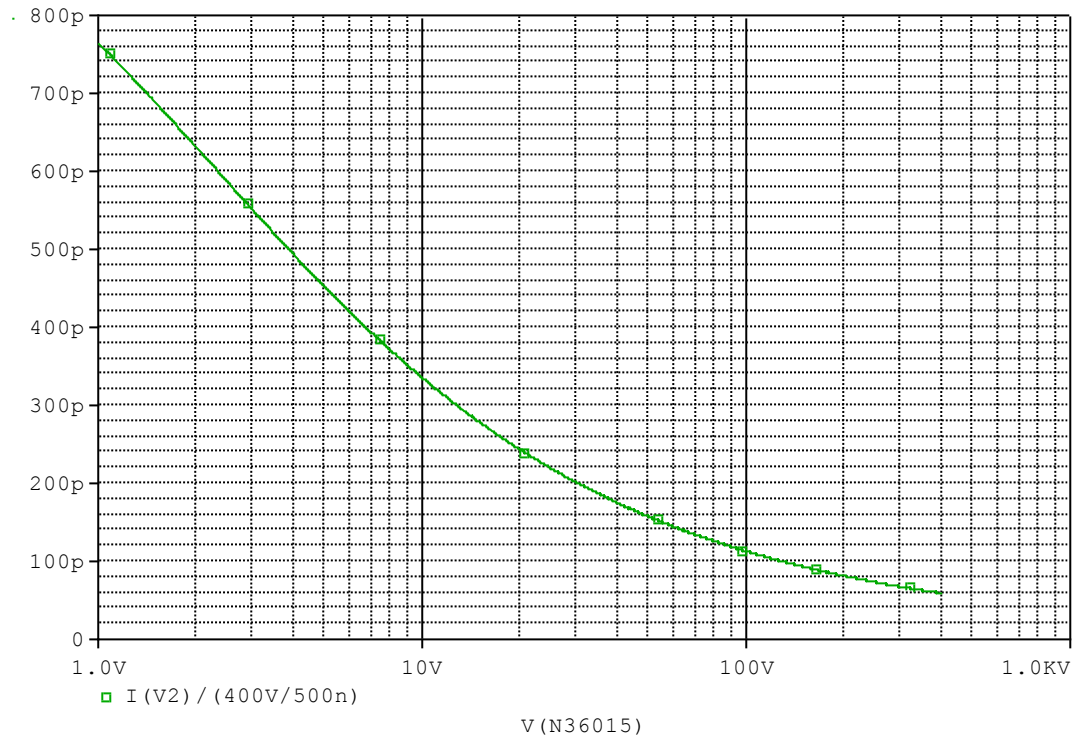


Simulation Result

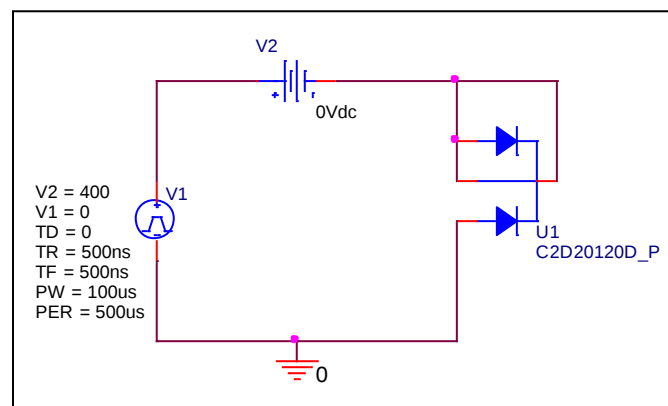
I_F (A)	V_F (V)		Error (%)
	Measurement	Simulation	
0.5	0.9200	0.9229	0.31
1.0	0.9750	0.9706	-0.45
2.0	1.0500	1.0483	-0.16
4.0	1.1900	1.1856	-0.37
8.0	1.4300	1.4422	0.85
12.0	1.6800	1.6914	0.68
16.0	1.9400	1.9376	-0.12
20.0	2.1900	2.1821	-0.36

Junction Capacitance Characteristic

Circuit Simulation Result

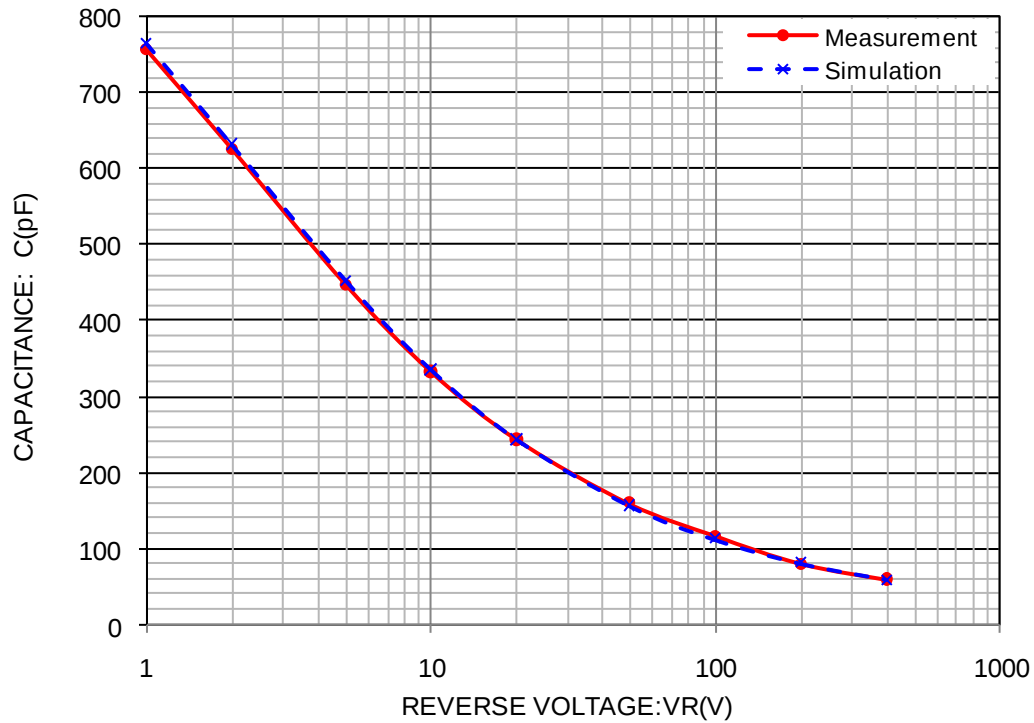


Evaluation Circuit



Comparison Graph

Circuit Simulation Result

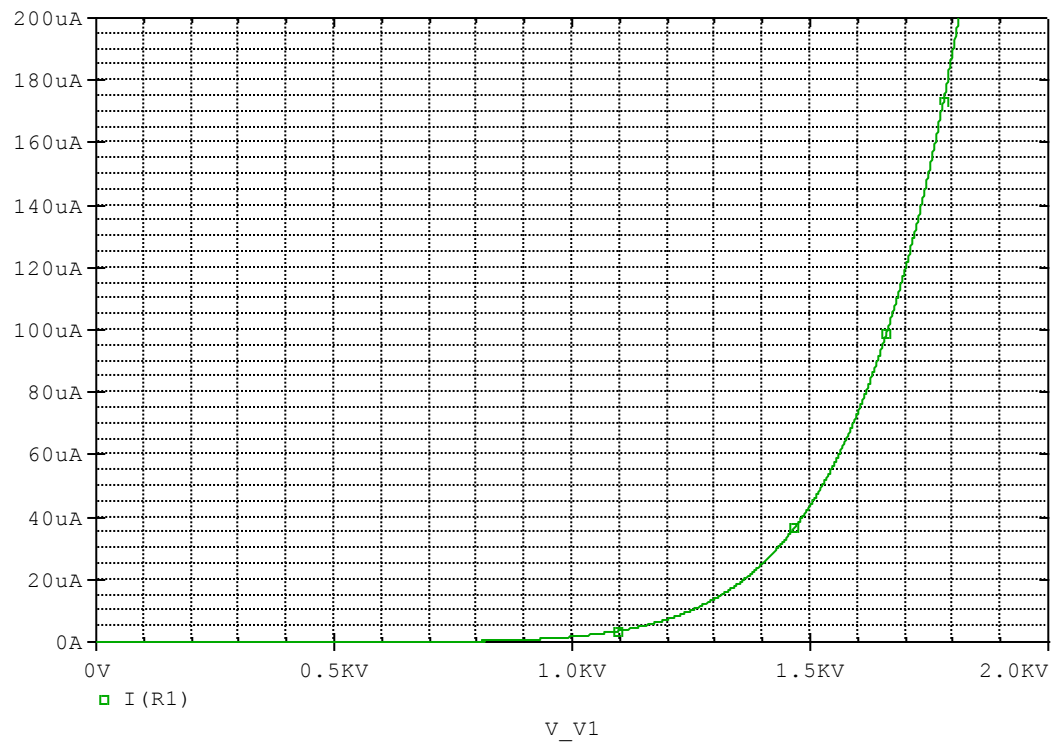


Simulation Result

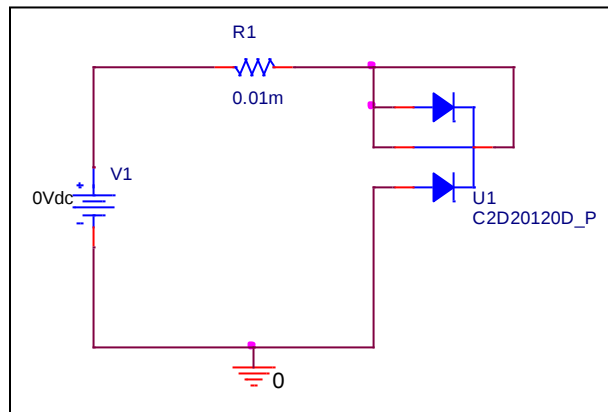
V_R (V)	C (pF)		Error (%)
	Measurement	Simulation	
1	757.000	764.565	1.00
2	625.000	631.433	1.03
5	447.000	452.066	1.13
10	333.000	335.587	0.78
20	243.000	243.615	0.25
50	160.000	157.163	-1.77
100	116.000	112.760	-2.79
200	80.000	81.353	1.69
400	60.000	59.118	-1.47

Reverse Characteristic

Circuit Simulation Result

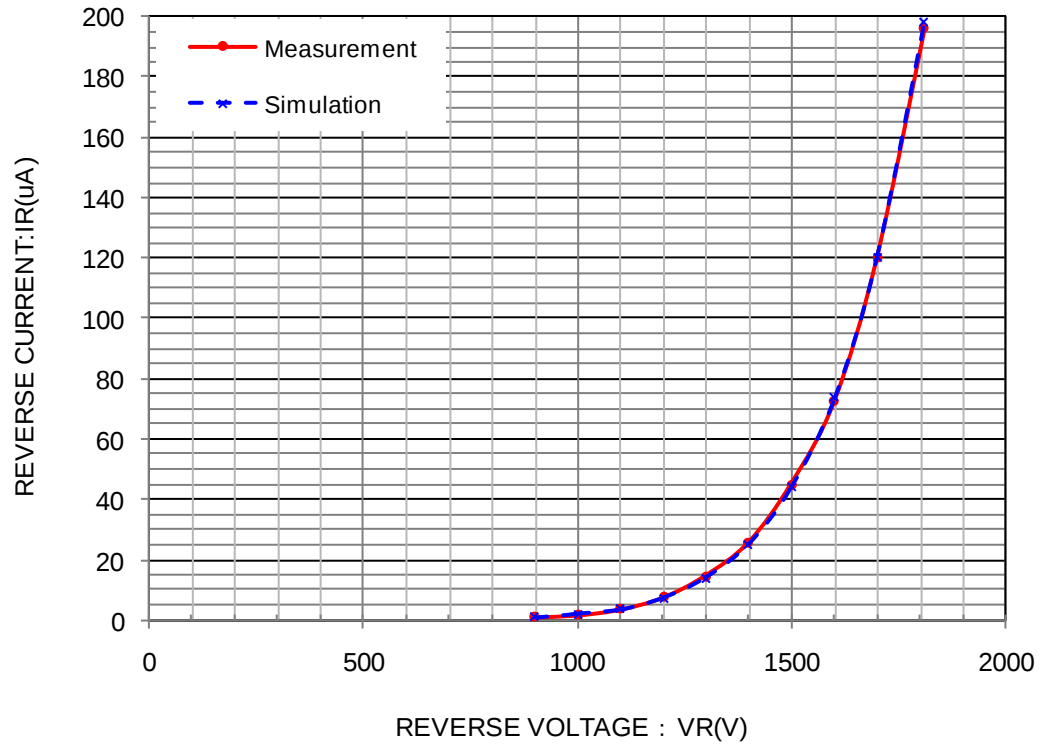


Evaluation Circuit



Comparison Graph

Circuit Simulation Result



Simulation Result

V_R (V)	I_R (μA)		Error (%)
	Measurement	Simulation	
900	0.7200	0.7276	1.06
1000	1.6500	1.6826	1.98
1100	3.6000	3.6152	0.42
1200	7.5000	7.2987	-2.68
1300	14.5000	13.8700	-4.34
1400	25.5000	25.1480	-1.38
1500	45.0000	43.8150	-2.63
1600	72.5000	73.5780	1.49
1700	120.0000	119.8260	-0.15